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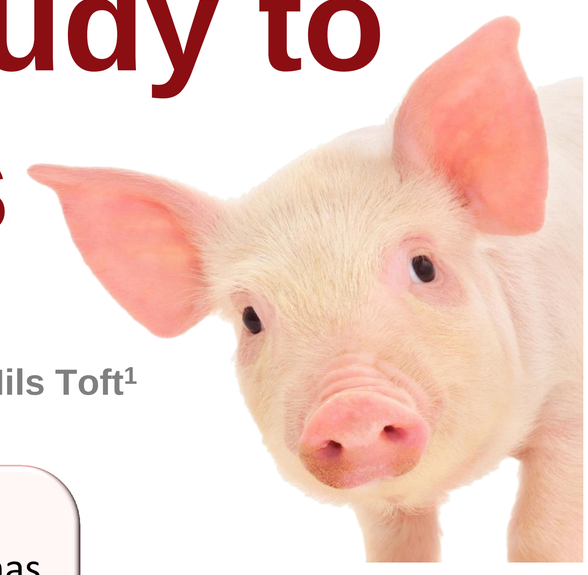


Introduction and objective

- The use of statistical process control (SPC) for monitoring endemic diseases has so far been unexplored.
- Porcine reproductive and respiratory syndrome (PRRS) in Denmark is a good example, where serological tests are compulsory.

So…

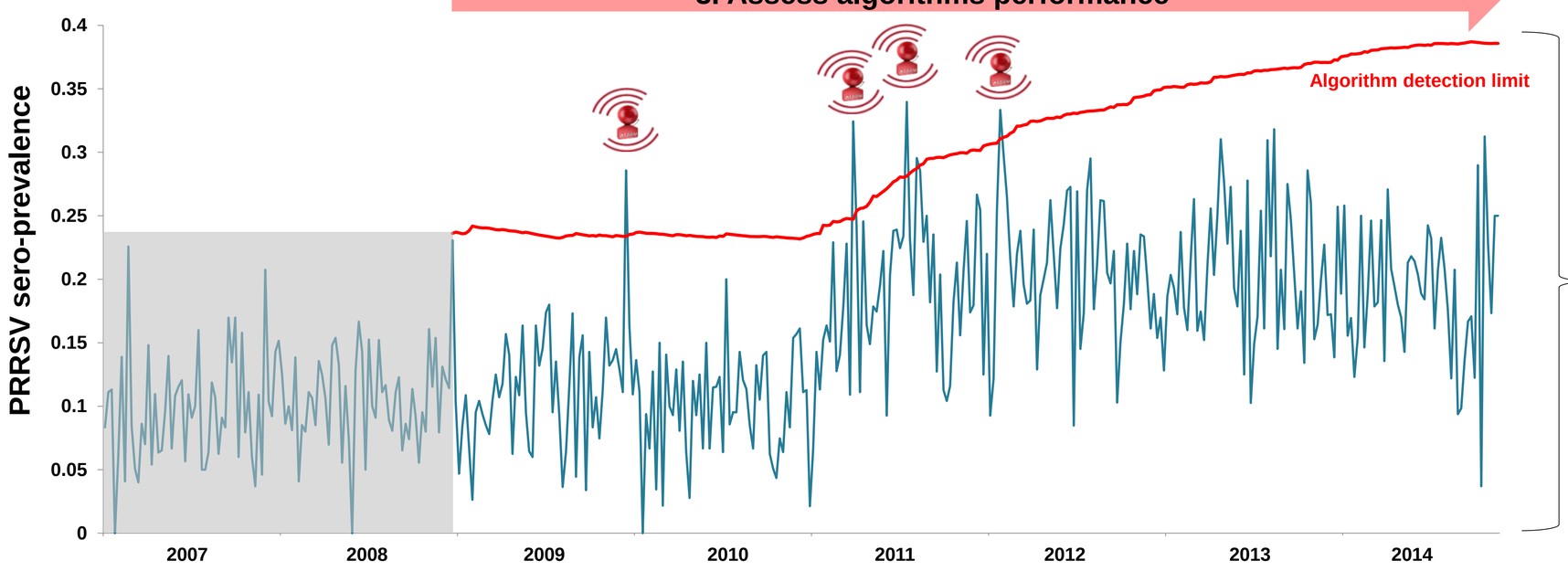
We assessed how accurately and fast we can detect changes in the PRRS sero-prevalence using SPC.

Materials and methods

1. Simulate the weekly PRRS sero-prevalence with changes from 10% to 15% and 20%

2.Train the algorithms

3. Assess algorithms performance



Algorithms tested:

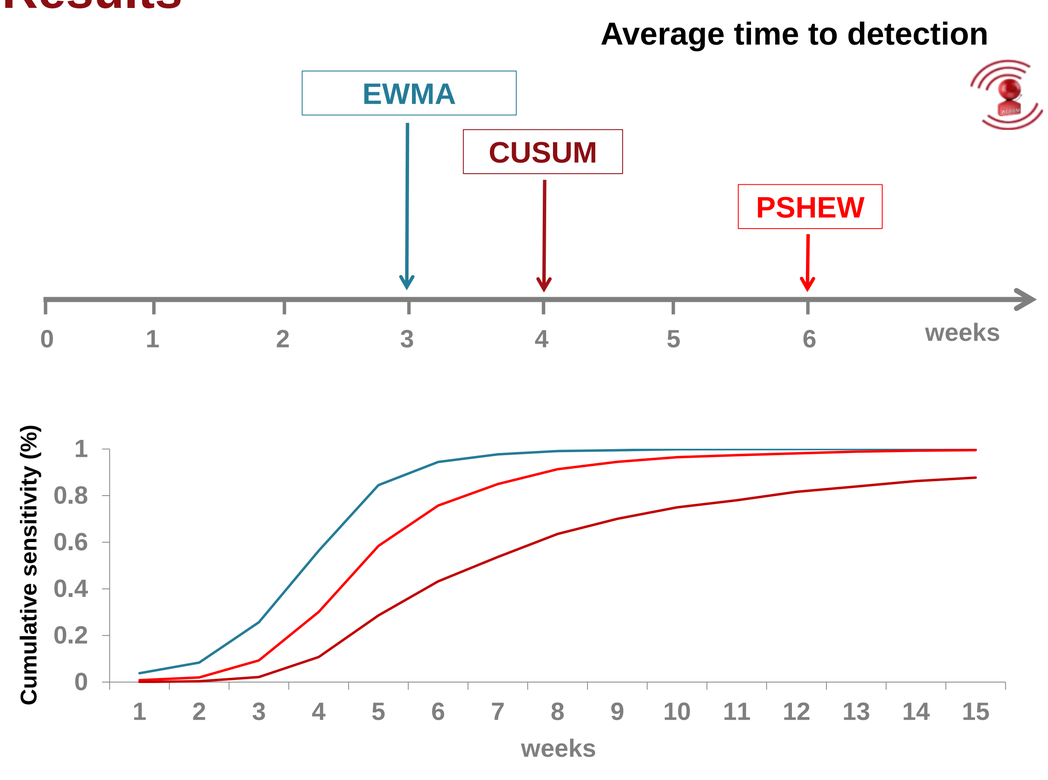
- Exponential Weighted Moving Average (EWMA)
- Cumulative sum (CUSUM)
- P Shewart (PSHEW)

Evaluation criteria:

- Timeliness
- Cumulative sensitivity

2000 simulations for each scenario

Results

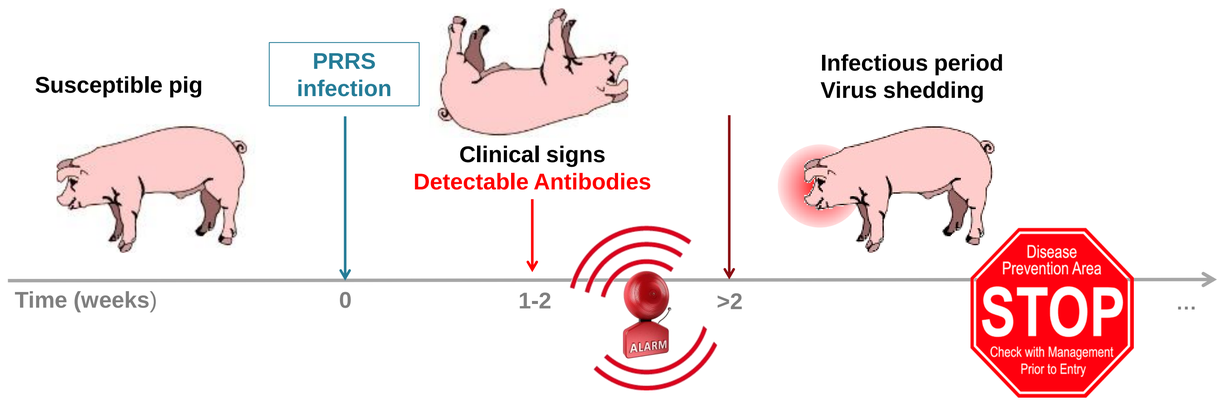


Conclusions

Small changes in the PRRS sero-prevalence were detected fast using SPC, having the potential to be use for monitoring real data.

Perspectives

Include SPC on a monitoring system for PRRS in Denmark.



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